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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,926	09/28/2001	Peter Kamvysselis	EMS-02003	4208

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EXAMINER	
SHINGLES, KRISTIE D	

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/965,926	KAMVYSSELIS, PETER	
	Examiner	Art Unit	
	Kristie Shingles	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *63,66-80 and 83-96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *63,66-80 and 83-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Per Applicant's Request for Continued Examination:
Claims 63 and 80 have been amended.
Claims 1-62, 64, 65, 81 and 82 have been cancelled.

Claims 63, 66-80 and 83-96 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/3/2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 63 and 80 have been considered but are moot in view of the new ground(s) of rejection

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 63, 66-80 and 83-96** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wahl et al* (USPN 6,324,654) in view of *Umeda et al* (USPN 5,920,817).

a. **Per claim 63**, *Wahl et al* teach a method for performing data recovery in a computer system comprising:

- sending data from a first storage device to at least one other secondary storage device, said data being sent in a plurality of data packets, each of said plurality of packets being associated with a sequence number having a first predetermined value (col.2 lines 47-65, col.3 line 21-col.4 line 45, col.5 line 16-col.6 line 57, col.7 lines 18-35, col.9 lines 30-39, col.10 lines 25-36 and col.21 lines 14-32);

- upon determining that the data has been successfully stored on all of said at least one other storage device, deleting journal entries in a sender corresponding to said data (col.7 lines 18-35, col.10 lines 44-64 and col.19 lines 53-61; upon receiving and acknowledgment receipt confirming successful storage on the secondary storage device, the writelog allows for the data entries to be updated, overwritten and removed to provide more space in the writelog journal device); and

- upon determining a failure in connection with synchronizing data between a first storage device and at least one other secondary storage device, deleting journal entries in each of said at least one other secondary storage device, and resending unsynchronized journal entries from the sender (Abstract, col.3 line 45-col.4 line 45, col.11 line 13-col.12 line 31, col.13 lines 16-30, col.18 lines 13-44, col.18-line 63-col.19 line 39 and col.23 line 64-col.24 line 24; failure recovery is provisioned with updates, retransmission and synchronization for unsynchronized data by implementation of remote mirroring in the writelog journal device and with the secondary storage devices).

However, *Wahl et al* fail to explicitly teach sending a plurality of data packets all having a same sequence number lower than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, wherein data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same

sequence number represent different data. However, *Umeda et al* teach packets have identical sequence numbers that's obviously lower than the successive unsent packet, which will have a higher sequence number due to the incrementing process (col.13 lines 61-66, col.15 lines 3-11, col.16 lines 17-35). These packets are stored in a buffer and sent in an order independent of the order in which they were created because the packet is output according to its corresponding reliability information, wherein the reliability information represents the "different data" of each packet (col.16 lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Wahl et al* and *Umeda et al* for the purpose of provisioning a process that allows packets to acquire identical sequence numbers, but is still capable of distinguishing between the packets in order to properly output the packets to the receiving devices.

b. **Claim 80** differs from claim 63 only in statutory subject matter, contains limitations substantially equivalent to claim 63 and is therefore rejected under the same basis.

c. **Per claim 66,** *Wahl et al* and *Umeda et al* teach the method of Claim 63, *Wahl et al* further teach the method wherein said sender is a WAN blade coupled to said first storage device (col.4 lines 33-42, col.5 lines 15-25 and col.10 lines 37-43).

d. **Claim 83** is substantially equivalent to claim 66 and is therefore rejected under the same basis.

e. **Per claim 67,** *Wahl et al* teach the method of Claim 66, wherein when a failure is determined, journal entries in each of said secondary storage device are determined to be

unsynchronized (col.3 line 66-col.4 line 32, col.9 line 61-col.10 line 24, col.12 lines 12-31 and col.18 line 28-col.19 line 17).

f. **Per claim 68,** *Wahl et al* teach the method of Claim 67, wherein a failure prevents a consistency group of storage devices from synchronizing data, said first storage device and said at least one other secondary storage device being included in said consistency group (col.6 lines 15-40, col.11 line 32-col.12 line 31, col.18 line 63-col.19 line 39 and col.23 line 44-col.24 line 23).

g. **Claim 85** is substantially equivalent to claim 68 and is therefore rejected under the same basis.

h. **Claims 69, 70, 84, 86 and 87** are substantially equivalent to claim 67 and are therefore rejected under the same basis.

i. **Per claim 71,** *Wahl et al* and *Umeda et al* teach the method of Claim 63, *Wahl et al* further teach the method wherein said failure is a link failure occurring when at least one communication link fails (col.11 lines 36-40, col.13 lines 16-30, col.14 line 23-col.15 line 12, col.20 lines 39-51 and col.23 lines 31-54).

j. **Claim 88** is substantially equivalent to claim 71 and is therefore rejected under the same basis.

k. **Per claim 72,** *Wahl et al* teach the method of Claim 71, further comprising: detecting a link failure by failure of a linked device to response to a direct inquiry (col.10 lines 20-64).

l. **Claim 89** is substantially equivalent to claim 72 and is therefore rejected under the same basis.

m. **Claims 73, 74, 90 and 91** are substantially equivalent to claim 71 and are therefore rejected under the same basis.

n. **Per claim 75,** *Wahl et al* teach the method of Claim 74, further comprising: in response to detecting said failed link, journaling writes to the WAN blade rather than the primary storage device, said WAN blade acting as a buffer to compensate for said failed link (col.4 lines 33-45, col.8 lines 27-40, col.11 lines 32-43, col.12 lines 46-61, col.23 lines 31-54 and col.24 lines 8-67).

o. **Claim 92** is substantially equivalent to claim 75 and is therefore rejected under the same basis.

p. **Per claim 76,** *Wahl et al* teach the method of Claim 75, wherein, upon said WAN blade having a journal that overflows, said WAN blade not acknowledging write operations by the primary storage device (col.3 lines 8-38, col.4 lines 33-45, col.7 line 11-col.8 line 2, col.18 lines 45-62 and col.24 lines 44-67).

q. **Claims 77, 93 and 94** are substantially equivalent to claim 76 and are therefore rejected under the same basis.

r. **Per claim 78,** *Wahl et al* and *Umeda et al* teach the method of Claim 63, *Wahl et al* further teach the method, wherein in response to the sequence number in the sender becoming equal to a second predetermined value different from the first predetermined value, acknowledging receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to said at least one other

secondary storage device (col.7 lines 18-35, col.7 line 47-col.8 line 27, col.11 line 44-col.12 line 38, col.19 line 40-col.20 line 38 and col.21 lines 7-32).

s. **Claim 95** is substantially equivalent to claim 78 and is therefore rejected under the same basis.

t. **Per claim 79,** *Wahl et al* teach the method of Claim 78, wherein said acknowledging includes sending an acknowledgement to a host in the computer system sending data to the first storage device prior to said data actually being transferred to the at least one secondary storage device (col.21 lines 7-32).

u. **Claim 96** is substantially equivalent to claim 79 and is therefore rejected under the same basis.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ogier (7,031,288), Alao et al (7,017,175), Perlman et al (6,996,712), LeBlanc et al (6,990,195), Aramaki et al (6,982,975), Wei et al (6,940,821).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER